List of Contents

NUMBER 1/2

L. Narupiyakul, A. Khumya, B. Sirinaovakul and **N. Cercone**	1	A Stochastic Knowledge-Based Thai Text-To-Speech System
M. I. Teboh-Ewungkem and **E. P. Salathe**	17	Substrate Diffusion from an Array of Capillaries with Co-Current and Counter-Current Flow
W. Chen and **M. Wang**	31	Qualitative Analysis of Predator-Prey Models with Beddington-De Angelis Functional Response and Diffusion
J. Shi, E. Donskoi, D. L. S. McElwain and **L. J. Wibberley**	45	Modelling the Reduction of an Iron Ore-Coal Composite Pellet with Conduction and Convection in an Axisymmetric Temperature Field
H.-W. Liu	61	New Similarity Measures Between Intuitionistic Fuzzy Sets and Between Elements
G. Choudhury and **K. C. Madan**	71	A Two-Stage Batch Arrival Queueing System with a Modified Bernoulli Schedule Vacation under *N*-Policy
J. Cui	87	Permanence of Predator-Prey System with Periodic Coefficients
J.-S. Guo, C.-T. Ling and **C.-C. Wu**	99	The Equilibrium Positions of Solid Bodies on an Elastic Wire with Energy Involving Arc Length
M. J. Piotrowska	123	Activator-Inhibitor System with Delay and Pattern Formation
J. Henderson and **C. C. Tisdale**	133	Five-Point Boundary Value Problems for Third-Order Differential Equations by Solution Matching
T.-L. Toh and **T.-S. Chew**	139	Henstock's Multiple Wiener Integral and Henstock's Version of Hu-Meyer Theorem
D. W. Verzi and **S. M. Baer**	151	Calcium-Mediated Spine Stem Restructuring
D. Huang, Y. Gong, Y. Tang and **W. Zhang**	167	Degenerate Equilibria at Infinity in the Generalized Brusselator
V. Gupta, R. N. Mohapatra and **Z. Finta**	181	A Certain Family of Mixed Summation-Integral Type Operators
A. Domoshnitsky, M. Drakhlin and **I. P. Stavroulakis**	193	Distribution of Zeros of Solutions to Functional Equations
P. Cerone and **S. S. Dragomir**	207	Approximation of the Integral Mean Divergence and *f*-Divergence via Mean Results

Y. Golster and **E. Litsyn** 221 Volterra Integro-Differential Equations and Infinite Systems of Ordinary Differential Equations

NUMBER 3/4

L. A. Gil-Alana 235 The Tests of Robinson (1994) for Fractional Integration. Time Domain versus Frequency Domain

J. S. R. Anttonen, P. I. King and **P. S. Beran** 245 Applications of Multi-POD to a Pitching and Plunging Airfoil

L. Marin and **D. Lesnic** 261 The Method of Fundamental Solutions for Inverse Boundary Value Problems Associated with the Two-Dimensional Biharmonic Equation

T. Sawik 279 A Cyclic Versus Flexible Approach to Materials Ordering in Make-To-Order Assembly

C. Piccolo III and **L. Billings** 291 The Effect of Vaccinations in an Immigrant Model

S. Lipovetsky and **W. M. Conklin** 301 Latent Class Regression Model in IRLS Approach

V. M. Kenkre, R. R. Parmenter, I. D. Peixoto and **L. Sadasiv** 313 A Theoretical Framework for the Analysis of the West Nile Virus Epidemic

F. Flori, C. Giacomoni and **P. Orenga** 325 Convergence of a Characteristic-Galerkin Scheme for a Shallow Water Problem

C.-J. Lin and **C.-H. Chen** 339 A Self-Constructing Compensatory Neural Fuzzy System and Its Applications

T. Götz and **J. Struckmeier** 353 A Simplified Model for Nonisothermal Crystallization of Polymers

C. I. Chiang, M. J. Hwang and **Y. H. Liu** 363 An Alternative Formulation for Certain Fuzzy Set-Covering Problems

M. Masoom Ali and **J. Wood** 367 Inference on Reliability $P(Y < X)$ in a p-Dimensional Rayleigh Distribution

V. I. Carbone and **M. Codegone** 375 Homogenization Process of Stratified Masonry

Y. Yavin 381 Modelling the Motion of an Antenna Based on a Plane with a Time-Dependent Inclination

S. R. Kannan 389 Extended Bidirectional Associative Memories: A Study On Poor Education

A. Nagurney and **J. Dong** 397 Management of Knowledge Intensive Systems as Supernetworks: Modeling, Analysis, Computations, and Applications

M. J. Castro, A. M. Ferreiro Ferreiro, J. A. García-Rodríguez, J. M. González-Vida, J. Macías, C. Parés and M. Elena Vázquez-Cendón — 419 The Numerical Treatment of Wet/Dry Fronts in Shallow Flows: Application to One-Layer and Two-Layer Systems

E. Mamontov — 441 A Specification of the Maxwell-Rayleigh-Heisenberg Approach to Modelling Fluids for Bioelectronic Applications

NUMBER 5/6

G. S. Gipson and B. W. Yeigh — 471 Scaling Issues Related to Modeling of Railroad Car Damage I—Derailment, Plastic Deformation, Rupture, and Impact

G. S. Gipson and B. W. Yeigh — 483 Scaling Issues Related to Modeling of Railroad Car Damage II—Explosions, Fires, and Safety Valves

C.-L. Fu, X.-T. Xiong and P. Fu — 489 Fourier Regularization Method for Solving the Surface Heat Flux from Interior Observations

S. Nadarajah — 499 Sums, Products, and Ratios for the Bivariate Gumbel Distribution

A. Thavanesawaran, S. S. Appadoo and J. Singh — 519 Random Coefficient Mixture (RCM) GARCH Models

A. Baksi and R. K. Bera — 533 Eigenfunction Expansion Method for the Solution of Magneto-Thermoelastic Problems with Thermal Relaxation and Heat Source in Three Dimensions

S. A. Nassar, K. T. Andrews, S. Kruk and M. Shillor — 553 Modelling and Simulations of a Bonded Rod

C. Zhao, M. Wang and P. Zhao — 573 Optimal Control of Harvesting for Age-Dependent Predator-Prey System

Y. Yavin — 585 Modelling of the Motion of a Disk Rolling on a Curve in $\mathcal{R}^3$

U. Foryś and A. Mokwa-Borkowska — 593 Solid Tumour Growth Analysis of Necrotic Core Formation

R. Revelli and L. Ridolfi — 601 Nonlinear Convection-Dispersion Models with a Localized Pollutant Source, II—A Class of Inverse Problems

M. Battaglio, I. Bonzani and D. Campolo — 613 Nonlinear consolidation Models of Clay with Time Dependant Drainage Properties

B. García, G. Rubio, C. Santamaría, J. L. Pontones, C. D. Vera and **J. F. Jimenez**	621	A Predictive Mathematical Model in the Recurrence of Bladder Cancer
Y. Yavin	635	Modelling the Motion of a Mobile Antenna Driven by Spinning Disks
E. Thandapani and **B. Ponnammal**	641	Oscillatory Properties of Solutions of Three-Dimensional Difference Systems
D. Jiang, N. Shi and **Y. Zhao**	651	Existence, Uniqueness, and Global Stability of Positive Solutions to the Food-Limited Population Model with Random Perturbation
H. K. Nguyen, T. L. Herdman and **E. M. Cliff**	659	Approximations for A Class of Volterra Integro-Differential Equations
B. Almási, J. Roszik and **J. Sztrik**	673	Homogeneous Finite-Source Retrial Queues with Server Subject to Breakdowns and Repairs
I. M. Gamba, S. Rjasanow and **W. Wagner**	683	Direct Simulation of the Uniformly Heated Granular Boltzmann Equation
I. Husain and **Z. Jabeen**	701	Continuous-Time Fractional Minmax Programming

NUMBER 7/8
SPECIAL ISSUE FOR
THE INTERNATIONAL CONFERENCE OF
COMPUTATIONAL METHODS IN SCIENCES AND ENGINEERING 2003
(ICCMSE 2003)

T. E. Simos and **J. Vigo-Aguiar**	xiii	Preface
Y. Li	711	An Iterative Method for Single and Vertically Stacked Semiconductor Quantum Dots Simulation
C. Mencar, G. Castellano and **A. M. Fanelli**	719	Deriving Prediction Intervals for Neuro-Fuzzy Networks
G. Papakaliatakis	727	Computational Study of the Initiation of Crack Extension in a Solid Propellant with a Circular Hole or Inclusion
E. C. Laskari, G. C. Meletiou, D. K. Tasoulis and **M. N. Vrahatis**	739	Privacy Preserving Electronic Data Gathering
L. S. Iliadis and **S. I. Spartalis**	747	Fundamental Fuzzy Relation Concepts of a D.S.S. for the Estimation of Natural Disasters' Risk (The Case of a Trapezoidal Membership Function)
S. Zimeras and **F. Gerogiakodis**	759	Bayesian Models for Medical Image Biology Using Monte Carlo Markov Chains Techniques

M. de'Michieli Vitturi and **F. Beux**	769	Nonlinear Pressure and Temperature Waves Propagation in Fluid-Saturated Rocks
T. E. Karakasidis, N. S. Cholevas and **A. B. Liakopoulos**	783	Parallel Short Range Molecular Dynamics Simulations on Computer Clusters: Performance Evaluation and Modeling
G. Papakaliatakis and **D. Karalekas**	799	Computational Study of Crack Growth in SiC/Al Composites
S. Sánchez, R. Criado and **C. Vega**	809	A Generator of Pseudo-Random Numbers Sequences with a Very Long Period
E. G. Varagouli, T. E. Simos and **G. S. Xeidakis**	817	Fitting a Multiple Regression Line to Travel Demand Forecasting: The Case of the Prefecture of Xanthi, Northern Greece
H. Ramos and **J. Vigo-Aguiar**	837	Variable Stepsize Störmer-Cowell Methods
J. L. Guisado, F. Jiménez-Morales and **J. M. Guerra**	847	Application of Shannon's Entropy to Classify Emergent Behaviors in a Simulation of Laser Dynamics
M. Christodoulakis, C. S. Iliopoulos, K. Park and **J. S. Sim**	855	Implementing Approximate Regularities
C. J. Mitchell and **G. Psihoyios**	867	Modelling Fuzzy Universal Resource Identifiers: A First Approach
A. Tocino and **J. Vigo-Aguiar**	873	Symplectic Conditions for Exponential Fitting Runge-Kutta-Nyström Methods
Z. A. Anastassi and **T. E. Simos**	877	Trigonometrically Fitted Fifth-Order Runge-Kutta Methods for the Numerical Solution of the Schrödinger Equation
G. Psihoyios and **T. E. Simos**	887	A New Trogonometrically-Fitted Sixth Algebraic Order P-C Algorithm for the Numerical Solution of the Radial Schrödinger Equation
D. P. Sakas and **T. E. Simos**	903	A Fifth Algebraic Order Trigonometrically-Fitted Modified Runge-Kutta Zonneveld Method for the Numerical Solution of Orbital Problems

NUMBER 9/10

F.G. Gascon and **D. Peralta-Salas**	921	Bagpipes Configurations in Mechanics and Electromagnetism
E. E. Yaz, C. S. Jeong, Y. I. Yaz and **A. Bahakeem**	931	Resilient Design of Discrete-Time Observers with General Criteria Using LMIs
R. C. Gupta and **S. Lvin**	939	Reliability Functions of Generalized Log-Normal Model
S.-K. Kim	947	Enhanced Management Method of Storage Area Network (SAN) Server with Random Remote Backups

G. Lin and **R. Yuan**	959	Periodic Solution for a Predator-Prey System with Distributed Delay
M. J. Anabtawi and **G. S. Ladde**	967	Dynamics of Fluids Flows Under Markovian Structural Perturbations
M. K. Maiti and **M. Maiti**	977	Production Policy for Damageable Items with Variable Cost Function in an Imperfect Production Process via Genetic Algorithm
J. Zhang, D. Wu and **D. L. Olson**	991	The Method of Grey Related Analysis to Multiple Attribute Decision Making Problems with Interval Numbers
S. P. Radzevich	999	A Possibility of Application of Plücker's Conoid for Mathematical Modeling of Contact of Two Smooth Regular Surfaces in the First Order of Tangency
J. C. Cortés, R. Company, L. Jódar and **E. Ponsoda**	1023	The Complementary Error Matrix Function and Its Role Solving Coupled Diffusion Mathematical Models
H. Malchow, F. M. Hilker, R. R. Sarkar and **K. Brauer**	1035	Spatiotemporal Patterns in an Excitable Plankton System with Lysogenic Viral Infection
G. B. Djordjević and **H. M. Srivastava**	1049	Incomplete Generlized Jacobsthal and Jacobsthal-Lucas Numbers
T. D. Frank	1057	Modelling the Stochastic Single Particle Dynamics of Relativistic Fermions and Bosons using Nonlinear Drift-Diffusion Equations
F. L. Litvin, I. Gonzalez-Perez, A. Fuentes, K. Hayasaka and **K. Yukishima**	1063	Topology of Modified Surfaces of Involute Helical Gears with Line Contact Developed for Improvement of Bearing Contact, Reduction of Transmission Errors, and Stress Analysis
P. Szopa	1079	Determining Modes for 2-D Micropolar Fluid Flows
W. Liu and **H. I. Freedman**	1089	A Mathematical Model of Vascular Tumor Treatment by Chemotherapy
J. P. Whiteley, D. J. Gavaghan and **C. E. W. Hahn**	1113	Oxygen Transport to Muscle Tissue where Regions of Low Oxygen Tension Exist
Y. Yavin	1123	Modelling the Motion of an Underground Mining Vehicle
G. Palazzo and **R. Pasquino**	1131	The Modelling of Thin Sheet Forming by Laser Beams Heat Transfer Models Toward Deformation Analysis
E. Carlier and **J. El Khattabi**	1137	Proposal for a Probabilistic Model of Dispersion: A First Validation
I. Bonzani, L. Mussone and **P. N. Zucca**	1145	From Experiments to Hydrodynamic Traffic Flow Models: II—Sensitivity Analysis

V. Coscia and **C. Rubino** 1151 Hemodynamic Enhancement in Reconstructive Surgery: Mathematical Model and Clinical Findings

NUMBER 11/12

E. Akcora, S. E. Grasman and **C. Saygin** 1163 A Job Shop Scheduling Heuristic for Varying Reward Structures

R. Shanmugam 1175 Modelling Web Changes Data Recatched During A Spread Of Internet Virus

E. H. M. Brietzke, S. R. C. Lopes and **C. Bisognin** 1191 A Closed Formula for the Durbin-Levinson's Algorithm in Seasonal Fractionally Integrated Processes

C.-I. Hsu and **Y.-H. Wen** 1207 Airline Flight Frequency Determination in Response to Competitive Interactions Using Fuzzy Logic

X.-M. Yuan 1225 The Improvement with Relative Errors of He *et al.*'s Inexact Alternating Direction Method for Monotone Variational Inequalities

A. Saadatmandi, M. Razzaghi and **M. Dehghan** 1237 Sinc-Galerkin Solution for Nonlinear Two-Point Boundary Value Problems with Applications to Chemical Reactor Theory

M. A. Ragusa 1245 The Cauchy-Dirichlet Problem for Parabolic Equations with VMO Coefficients

R. Pavani and **R. Talamo** 1255 The Representation of Periodic Solutions of Newtonian Systems

G. Dattoli, M. X. He and **P. E. Ricci** 1263 Eigenfunctions of Laguerre-Type Operators and Generalized Evolution Problems

M. Durán, E. Ortega-Torres and **J. Rappaz** 1269 Weak Solution of a Stationary Convection-Diffusion Model Describing Binary Alloy Solidification Processes

I. Kozlova, M. Singh, A. Easton and **P. Ridland** 1287 Twospotted Spider Mite Predator-Prey Model

L. Brugnano, F. Di Patti and **G. Longo** 1299 An "Incremental" Mathematical Model for Immune Thrombocytopenic Purpura (ITP)

F. J. Solis, B . Tapia, J. V. Romero and **J. Moreno** 1315 Quadratic Infectious Diseases Mathematical Models: Chronic States, Sanity Levels, and Treatment

P. Carlone, G. S. Palazzo and **R. Pasquino** 1325 Modelling of Film Casting Manufacturing Process Longitudinal and Transverse Stretching

A. Klimovsky 1339 Learning and Generalization Errors for the 2D Binary Perceptron

Y. Li, X. Liu and **H. Zhang** 1359 Dynamical Analysis and Impulsive Control of a New Hyperchaotic System

D. Giuliani 1375 Gaussian Curvature: A Growth Parameter for Biological Structures

NUMBER 13

T. Y. Berger-Wolf, W. E. Hart and **J. Saia** 1385 Discrete Sensor Placement Problems in Distribution Networks

K. B. Nichols, M. A. Venkataramanan and **K. W. Ernstberger** 1397 Product Line Selection and Pricing Analysis: Impact of Genetic Relaxations

C. Coles and **D. Murio** 1411 Numerical Solutions of Inverse Spatial Lotka-Volterra Systems

S. De Andreis and **P. E. Ricci** 1421 Modelling Population Growth via Laguerre-Type Exponentials

Y. Yavin 1429 Modelling the Motion of a Disk Rolling on a Curve in $\Re^3$: The Case Where the Motion is Driven by Using Two Overhead Rotors

B. Lods 1441 Semigroup Generation Properties of Streaming Operators with Noncontractive Boundary Conditions

M. Lo Schiavo 1463 Kinetic Modelling and Electoral Competition

Y. Yavin 1487 The Motion of a Car Moving on a Terrain: A Kinematic Model

D. Greenspan 1491 Molecular Modeling of Flow Past an Inclined Flat Plate